Evaluating the Feasibility and Potential Impact of a Transitional Care Management Service in an Independent Community Pharmacy + Clinic

By
Jefferson Pike Jr.

Honors Thesis
UNC Eshelman School of Pharmacy
University of North Carolina at Chapel Hill

March 3rd, 2021

Approved:

Melanie Livet, PhD
Faculty Mentor
Center for Medication Optimization (CMO)
Division of Practice Advancement and Clinical Education
UNC Eshelman School of Pharmacy
University of North Carolina at Chapel Hill
Kerr Hall Suite 2400, Campus Box 7574
Chapel Hill, NC 27599
(919) 966-9597 Phone
melanie.livet@unc.edu

ABSTRACT

Introduction: Hospital readmissions are a significant and largely preventable burden on the healthcare system. They can often be prevented with diligent coordination of care and a smooth transition of patients from hospitalist back to primary care. Transitional care management is a billable service that is designed to reward providers for reducing readmissions. This study assessed the feasibility and potential impact of a transitional care management service in the setting of an independent community pharmacy and embedded clinic.
Methods: This exploratory mixed-method quality improvement study pursued three aims: (1) describe the current landscape of transitional care services in the literature based on an informal environmental scan; (2) adapt and improve the baseline transitional care service in Hillsborough Pharmacy to align with billing requirements for billing as guided by the intervention mapping methodology; and (3) establish the feasibility of the transitional care service in the pharmacy setting by conducting interviews with pharmacists considering a partnership with the clinic franchise company (IndyCare).
Results: The environmental scan found 26 transitional care studies in community pharmacy settings. Feedback on service implementation was abstracted from the studies and used to identify best practices, facilitators, and barriers to program implementation. Key insights included the need for buy-in from external stakeholders to enable patient data sharing, and careful planning to ensure satisfactory patient enrollment in the service. These insights were used to improve the transitional care service through iterative intervention mapping in order to identify desired outcomes and revise the clinic's processes to achieve them in the context of anticipated facilitators and barriers. This process enabled the clinic to achieve full alignment with billing requirements. Interview feedback from future partners was generally positive, with interviewees expressing an intent to partner in providing transitional care management.
Conclusions: The independent pharmacy + clinic is a viable practice setting for implementing a transitional care management program, provided careful planning and awareness of best practices. While having in-house providers allows for more autonomy, collaboration with external providers is still a vital component for numerous reasons, including notification of recent discharges and shared patient data. Given its collaborative nature, transitional care management is a good service for initiating collaborative partnerships with external healthcare professionals.

INTRODUCTION

Patients face numerous risks when they transition from inpatient to outpatient settings.[1] Clinical information can be lost, acute medicines provided in the hospital may be duplicative to chronic medicines, and the patient may be disoriented and overwhelmed with new health problems.[1,2] This process can be simplified with the help of healthcare professionals coordinating the transition from hospital back into patients' homes and communities.

Without efficient transitional care coordination services, preventable hospital readmissions became a tremendous burden in the United States. In 2011, there were 3.3 million 30-day readmissions, with an associated cost of over $40 billion.[3] In 2013, the Centers for Medicare and Medicaid services (CMS) instituted a Transitional Care Management (TCM) program to help address this problem.[4]

Transitional Care Management (TCM) is a reimbursable service instituted by CMS as a tool for healthcare providers to reduce preventable readmissions.[4] It comprises two current procedural terminology (CPT) codes that stratify discharged patients into moderate- and high-complexity cases, respectively: 99495 and 99496. TCM services must be billed under the license of either a physician or a non-physician provider, including certified nurse-midwife (CNM), clinical nurse specialist (CNS) nurse practitioner (NP), or physician assistant (PA). The purpose of the TCM program is to bridge the gaps in care continuity that can occur when patients shift between clinical settings. Medication lists and care plans often become muddied during these transitions. The incoming caretakers are frequently missing key parts of the patient's medical record, and these breakdowns in transitional care communication likely contributed to the nearly 20% rate of 30-day readmissions to hospitals seen in the Medicare population in 2003-2004.[2] By empowering community clinics to be stewards of transitional care, we have an opportunity to improve a pivotal step of the patient journey.

Patients who are being discharged from an inpatient hospital setting to their home or assisted living qualify for the TCM service, which consists of three required clinical interventions, including an interactive contact with the patient (either over the phone, via email, or in-person), a list of specific non-face-to-face services like reviewing need for follow-up appointments and assisting with scheduling, and a face-to-face visit with a provider.[4] Please refer to Appendix 1 for a comprehensive list of TCM requirements.

Community pharmacies present a novel practice setting for TCM services. Compared to other primary care settings, community pharmacies are much more accessible, with patients visiting their pharmacist five to eight times more frequently than their physician(s).[5] This higher rate of utilization provides opportunities for more frequent clinical interactions with patients. This project focused on specifically understanding the feasibility and potential impact of a transitional care management service within an independent community pharmacy, linked with an embedded clinic.

The Hillsborough Pharmacy/IndyCare Healthcare Hub is an integrated independent community pharmacy and urgent care clinic where pharmacists and nurse practitioners work together to care for patients and fill gaps that other care settings do not provide. IndyCare launched a TCM program in 2019 in collaboration with the UNC Health Care Medical Center to smooth hospital discharges and ensure continuity of care. At the beginning of this quality improvement study, there were distinct issues with the service. It did not initially meet all the standards for TCM billing, so the community pharmacists' and nurse practitioner's efforts were not being financially compensated. Additionally, parts of the workflow were cumbersome and required a structured improvement process.

Most previous TCM studies evaluate the outcomes of programs that are already fully implemented, without characterizing the steps taken to reach that point.[6–9] Favorable outcomes data have demonstrated the efficacy of up-and-running TCM services, including reduced hospital readmissions,[10] improved patient adherence,[11] and positive financial return on investment.[12] However, there is significantly less research concerning best practices for developing and implementing such programs.

This lack of implementation guidance can be particularly problematic in open healthcare systems, where various unaffiliated providers seek to collaborate for a given patient's health. Challenges such as electronic health record (EHR) interoperability, alignment of stakeholder incentives, and data security require a purposeful implementation plan to design an intervention around the nuances of its practice setting. Implementation science provides a guided framework for taking an intervention described in the literature and applying or improving it in a new practice setting with its unique stakeholders, resources, and other contextual variables. By applying structured and iterative scientific methodology to the design of a new clinical service, the program can be optimally adapted to a specific practice setting.

This study specifically aimed to:

1. *Describe the current landscape of TCM services, including program design, clinical/financial outcomes, and facilitators/challenges to implementing the TCM service in a hospital-to-independent pharmacy practice setting.* This was accomplished through a prospectively-designed environmental scan/literature review.

2. *Adapt and improve the baseline TCM service at Hillsborough Pharmacy to align with requirements for CMS billing, the goals of the unaffiliated stakeholders, and the contextual needs of the landscape.* This was accomplished through the application of intervention mapping (IM) methodology to inform, optimize, and describe the efforts of a dedicated project work group.

3. *Establish the feasibility of the TCM service in the hospital-to-independent pharmacy practice setting.* This was accomplished through structured interviews with unaffiliated independent pharmacists. Interviewees gave feedback on the TCM program according to a set of feasibility parameters supported by the literature.

In pursuit of these specific aims, our goal was to implement a sustainable transitions of care program at Hillsborough Pharmacy and use insights from that process to create an implementation roadmap that could be applicable to a range of independent pharmacy practice contexts. This framework should help the TCM service achieve a streamlined workflow, meet the standards for TCM billing, be financially sustainable, and bring value to both the community pharmacy and the patients they serve.

METHODS

TCM Program Description

Hillsborough Pharmacy is a community pharmacy located in an old strip center in Hillsborough, North Carolina. IndyCare is a partnered urgent care clinic occupying space conjoined with the pharmacy. Despite sharing the neighborhood with urgent cares and clinics of two large competing health systems, the Hillsborough Pharmacy + IndyCare clinic has identified and filled multiple care gaps for its population of Medicare, Medicaid, and third-party insured patients. The store fills 250−300 prescriptions daily, and its services include medication delivery, adherence packaging, medication synchronization, therapy management, immunizations, and compounding. IndyCare creates the opportunity to expand the clinical services that pharmacists at Hillsborough Pharmacy can provide. The clinic groups its services into four quadrants: acute care, preventive health, collaborative care, and unique local

solutions. By working in conjunction with an urgent care clinic, Hillsborough Pharmacy has begun to forge partnerships with doctors' offices in the area to conduct TCM, annual wellness visits (AWVs), smoking cessation consults, and other auxiliary services that the doctors' offices do not have the capacity to execute.

While pharmacists alone cannot bill for TCM services, they are trained to provide many of the services included in TCM, such as medication reconciliation, patient education, and treatment adherence support. Through a collaborative practice agreement with a provider, or in the case of Hillsborough Pharmacy, through an embedded clinic and nurse practitioner, pharmacies can play a key role in safely transitioning patients to the outpatient setting. The present workflow for the TCM service at Hillsborough Pharmacy can be found in Appendix 2. When the IndyCare team receives notification that one of their patients has been discharged from a healthcare setting, they attempt to contact the patient to perform the non-face-to-face interaction, schedule the subsequent face-to-face visit, and provide follow-up services, relaying important clinical information back to the referring external partner as soon as possible.

Study Design Overview

Each aim of this implementation study included distinct methodology which, taken together, comprise an approach to designing a TCM service that will (ideally) be replicable, sustainable, and scalable. These methods included (1) an environmental scan/literature review to identify best practices, as well as anticipated implementation facilitators and barriers for TCM implementation in the community pharmacy setting, (2) intervention mapping with the TCM working group to refine the program based on Aim 1, and (3) an interview-based feasibility study to assess the extent to which the TCM model can be implemented within other community pharmacy contexts. The environmental scan in this study effectively described the current landscape and outcomes of TCM services in community pharmacies to date, providing context for the IndyCare implementation team to identify realistic service goals, opportunities, and operational improvements. The intervention mapping methodology guided the refinement of the program and implementation strategy specific to the Hillsborough Pharmacy practice setting through the development of proximal objectives and strategies to achieve them (logic model). And finally, the feasibility interviews captured further considerations for applying this TCM implementation strategy in other community pharmacies.

Data Collection and Analysis

Aim 1: Environmental scan

This literature review provided a baseline understanding of the current evidence supporting TCM services, current gaps in the literature, and some preliminary guidance for program implementation to serve as a starting framework for our study. It was conducted by querying PubMed, Embase and Scopus with the following search terms (customized as needed for each database):

"(transitional care[tw] OR transition care[tw] OR transitions-of-care[tw] OR follow-up[tiab] OR follow-ups[tiab] OR patient care[Mesh] OR Continuity of Patient Care[Mesh] OR "Transitional Care"[Mesh])

AND (patient discharge[MeSH] OR discharge*[tiab] OR release*[tiab])

AND (Community Pharmacy Services[MeSH] OR community pharmacy[tw] OR community pharmacies[tw] OR community pharmaceutic*[tw] OR community pharmacist*[tw])"

Studies were evaluated if they included the practice setting of at least one hospital and at least one community pharmacy; if pharmacists played a central role in the service; if their outcomes include clinical, financial, or implementation outcomes data related to a transitions of care service; if they were written in English, involved human subjects, were conducted in the United States, and were published in 2013 or later (the first year TCM billing was implemented).

Key findings from the evaluated literature and services were abstracted into a matrix describing TCM intervention settings, target populations, methodologies, outcomes, challenges, facilitators, and limitations. This information was then provided to the Hillsborough Pharmacy TCM service stakeholders as a report with an accompanying discussion session. It provided key insights to design the baseline logic model included as part of the intervention mapping process (Aim 2).

Aim 2: Intervention Mapping

The second aim of this study served to transform the TCM service from alpha status as a pilot program into an integrated, sustainable intervention with the necessary technology and workforce support.

Refining the program and its implementation was informed by the intervention mapping (IM) program design methodology adapted from previous studies and completed in close collaboration with the program development team.[13,14] Our IM approach comprised the following steps: (1) creating a matrix of proximal program objectives linked with strategies to achieve them (logic model), (2) redesigning the program and its implementation based on the logic model, and (3) creating additional materials in support of the refined program (i.e., workflow training program for staff).

The logic model is a table linking the proximal objectives of the TCM intervention with the strategies to achieve them. A copy of the IndyCare TCM service logic model can be found in Appendix 3. It specifies important objectives for a successful TCM service, important, changeable determinants, the applicable patient population to which the intervention is applied, and a timeline for achieving program objectives.

This logic model was used to anchor regular structured work group discussions among the program development team in order to improve the TCM service, with the objectives and strategies being evaluated and revised per feedback from each of the stakeholders involved in the TCM program. Strategies, action items, new challenges, successes, and other informative data captured from each meeting were added to the logic model and used to refine the TCM service and next implementation steps (e.g., need to improve patient enrollment, or workflow and technology training for all providers). Ultimately, this descriptive research methodology serves to evolve the TCM service to a state where it is meeting the intended objectives with an operational framework that is form-fitted to the practice setting and contextual needs of the program stakeholders.

Aim 3 Methods: Feasibility Interviews

Unaffiliated independent pharmacists considering partnership with IndyCare's TCM program were interviewed with a set of questions designed to qualitatively assess the feasibility of a TCM service in the independent community pharmacy practice setting. This study was approved by UNC IRBIS (study #: 19-3286) with level 2 data security requirements. For this project, feasibility is defined as the extent to which an intervention can be carried out in real-world settings. These interviews were conducted with 5 independent pharmacists who were considering partnership with the IndyCare TCM program.

Consenting interview participants were provided with a description of the TCM service model (including the patient care process, the care coordination protocols/workflow, and the logic model). They were then asked a series of questions regarding the feasibility of implementing this TCM service in their

specific practice setting. These questions were used to gauge the feasibility of the TCM service according to feasibility concepts established in the literature (see Table 1)[13–18]: efficacy potential, perceived appropriateness (fit), acceptability, practicality, usability, implementation facilitators/challenges, and intent to use. The interviewer used a facilitator guide to clarify the interviewee's answers, eliciting feedback and rationale to justify each response, and recording implementation barriers, facilitators, and recommended changes to the service.

Table 1. Definition of Feasibility Measures

Feasibility Measure	Definition
Efficacy potential	Perceived likelihood that the intervention will be effective
Perceived appropriateness (fit)	Perceived fit, relevance, or compatibility of the innovation for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem
Acceptability	Perceptions that intervention is agreeable, palatable, or satisfactory
Practicality	The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting (suitability or practicability)
Usability	Perceived ease of use and usefulness of an intervention
Intent to use	Degree to which an intervention will be adopted by the participants
Facilitators	Elements that enhance the service's successful implementation or achievement of desired outcome
Barriers	Elements that stand in the way of the service's successful implementation or achievement of desired outcome

Each interview was recorded and transcribed in order to analyze the content. Responses were then organized conceptually and coded for themes. These coded themes were then abstracted into a matrix so that comparisons could be made within and across interviews. The results from these interviews were then shared with the team to further refine the TCM service's implementation plan, per Aim 2.

RESULTS

Aim 1: Environmental Scan

Searches were executed in PubMed, Embase, and Scopus on January 9th, 27th, and February 10th, respectively (2020). 26 articles were found to meet the inclusion criteria, from which best practices, facilitators, and barriers were drawn. Implementation insights were categorized into 5 themes: (1) patient identification and enrollment, (2) patient information sharing, (3) patient engagement, (4) program design, and (5) TCM champions within partner organizations.

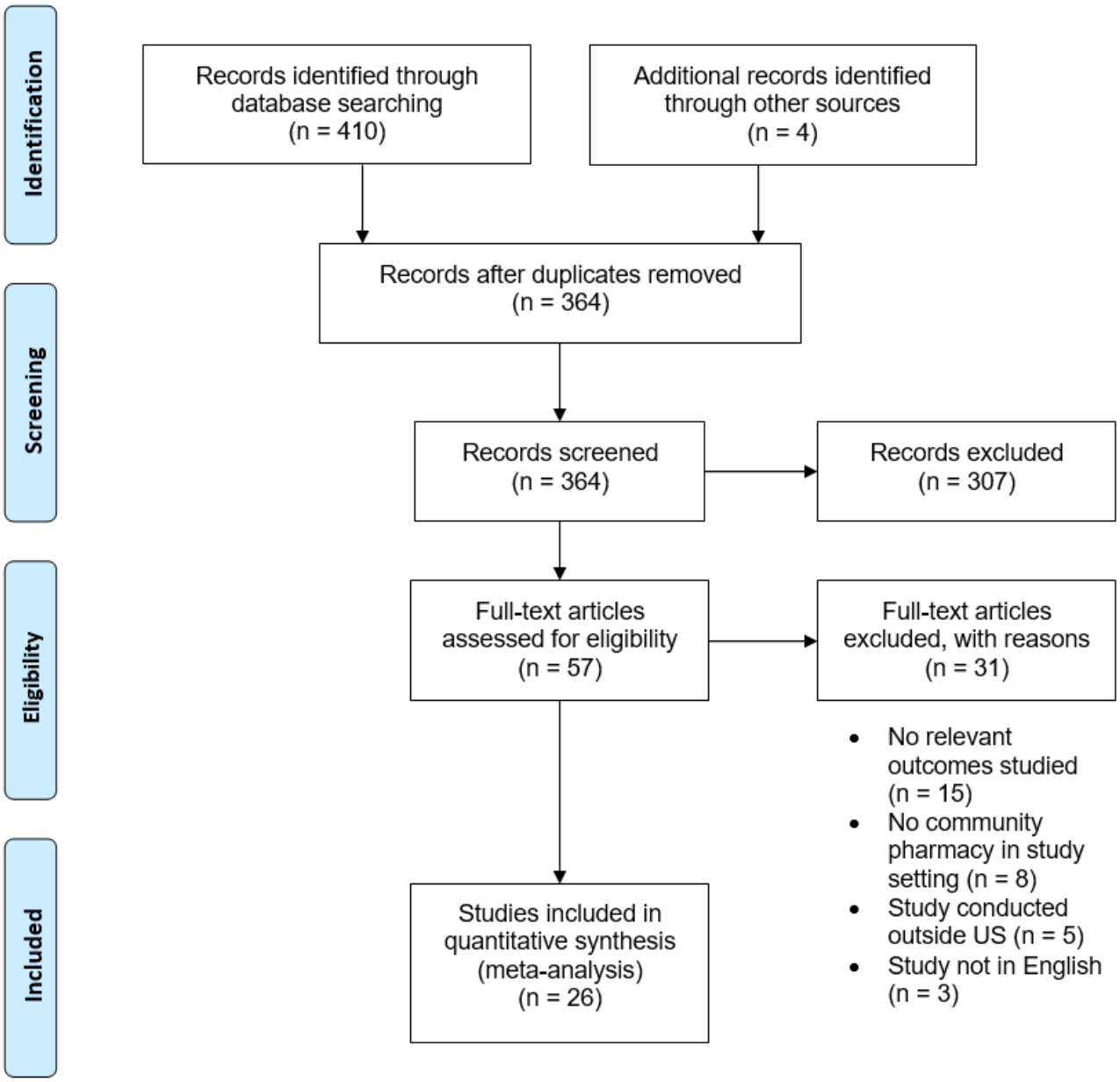


Figure 1. PRISMA diagram of the environmental scan.

For patient identification and enrollment, key facilitators included using either hospital clinicians to identify eligible patients or claims data algorithms,[10,19–21] encouraging walk-in appointments with print

advertisements in either the pharmacy or hospital lobbies,[22] and sharing of patient EHR with the pharmacy (or at least the patients' discharge summary).[9,10,20,23,24] Patients were found to be more receptive to TCM if they were already customers of the participating pharmacy,[25] and/or enrolled in other high-touch services like a meds-to-beds program.[24] Barriers to patient recruitment included failing to utilize all available avenues of recruitment,[23] not engaging enough community pharmacies to provide the service,[9,23] incorrect patient contact information, and patients declining due to lack of perceived benefit or perceived barriers to service utilization.[10,19,26]

EHR data access emerged as a key variable for patient information sharing. Studies consistently noted shared patient clinical data or lack thereof as a key facilitator or barrier, respectively.[19,21,27] Other facilitators for patient information sharing were hospitalization claims alerts from payer partners, and receiving pertinent lab results, medication changes, and chief complaint information in the discharge summary.[26] Numerous barriers were identified related to information sharing: information sourced from a health information exchange (HIE) was found to be unsatisfactory in one study, particularly with regard to medication lists.[22] It can be challenging to reconcile medication lists between hospitals, PCPs, and other community pharmacies.[19,20,26] Hospital providers can be especially difficult to reach after a patient has been discharged.[10,20,21]

For patient engagement, key facilitators that were identified include identifying and enrolling eligible patients prior to discharge,[10,20,28] providing patients with a post-TCM education summary and action plan,[23] and providing patients with incentives to attend face-to-face appointments such as lottery tickets or hair & nail salon vouchers.[26] Barriers included poor attendance rates for TCM with patients that were not already pharmacy customers,[10] difficulty in providing some elements of TCM via telehealth (e.g., education on how to use blood glucose monitors),[21] and difficulty for many patients in presenting to a face-to-face visit just a few days after a hospitalization.[25]

For program design, key facilitators were using stakeholder feedback to refine the service, whether that involved satisfaction forms from patients or surveys of providers and pharmacists.[29] One service in the literature used a call center staffed by student pharmacists and technicians to facilitate the program.[10] Generally, pharmacy staff initiating a TCM service were provided training in medication therapy management and TCM beforehand. When it comes to counseling patients on adherence, researchers found it beneficial to be patient-specific rather than using a standardized script.[30] And finally, timely patient follow-up after the face-to-face visit was recommended to monitor the resolution of medication- and disease-specific problems.[21] Program design barriers included lack of pharmacy/hospital resources, although this was less of a problem when TCM was integrated into preexisting workflows.[20,31] Another barrier identified was the conflict arising from the pressure on traditional retail pharmacies to maximize daily dispensing volume and the time-intensive nature of TCM, potentially precluding dispensing pharmacy staff from participation.[20]

The final theme of implementation feedback was TCM champions within partner organizations. Key partners identified for successful implementation included senior hospital leadership,[10,19] nurses,[19,21,32] social workers, hospital pharmacists & physicians,[27,31] and primary care providers.[28] Key barriers in this category were a lack of providers recognizing the scope and impact of pharmacist MTM services,[29,31] low physician acceptance of community pharmacist clinical recommendations and lack of hospital staff buy-in.[10,19,21,31]

Table 2. Key Findings from the Environmental Scan.[6,9–11,19–40]

Theme	Facilitators	Barriers	Best Practices
Patient Identification & Enrollment	• Identify eligible patients via… ○ Hospital clinician referral ○ Claims-based algorithms ○ Walk-ins via print advertisements • Discharge summaries sent to pharmacy ○ Electronic transfer preferred • Risk stratification • Easier to enroll if patients are: ○ already customers of participating TCM pharmacies ○ already enrolled in meds-to-beds service	• "Patient recruitment is one of the greatest challenges with the community pharmacy TOC model" ○ Should have exhausted all possible avenues for patient recruitment • Should have recruited more community pharmacies • Patient contact info often incorrect • Service declined for… ○ lack of perceived benefit ○ barriers to service utilization	• Achieve greatest impact by focusing on high-risk patients
Patient Information Sharing	• EHR access from hospital ○ use existing IT processes for patient data transfer • Hospitalization claims alerts from payer(s) • Discharge summary includes lab results, treatment or hospital course, discharge meds, follow-up plans • TCM summary fax to PCP	• No EHR connectivity with hospital ○ Tight regulatory protocols from health systems may limit access & exchange of info between prescribers and community pharmacies • Chief complaint is unclear • Patient information in HIE was limited, particularly regarding medication lists • Challenging to reconcile med lists with hospitals, PCPs, and other pharmacies ○ Hospital prescribers difficult to reach; pharmacy not receiving medication stop-orders • No universal process for integrating d/c summary data into workflow • No effective or consistent method for explaining service to caregivers if they were not at bedside	• Effective and comprehensive discharge information sharing between inpatient pharmacists and community pharmacists ○ Build on IT processes already used in the health systems
Patient Engagement	• Pre-discharge TCM introduction + enrollment • Patient receives post-TCM education summary + adherence plan • Patient incentives to attend appointments, e.g., lottery tickets or hair & nail salon vouchers	• Much harder to communicate with patients post-discharge vs. in hospital • Very high no-show rates for TCM appointments ○ Possibly due to no prior pharmacy relationship with patient • Many patients find it difficult to present to a TCM face-to-face visit after hospital discharge (→ home visit) ○ Some patients are not comfortable with healthcare visitors in their home • Virtual visits: Very hard to provide training on newly-prescribed devices e.g. blood glucose monitors or INR monitoring	• Confirm that follow-up documentation is received by pts during follow-up calls • Systematically identify the caregivers of each pt, get their input when planning discharge process, and incorporate needs of the caregivers themselves into TCM

		• Videoconferencing did not always work in rural areas (regarding delivery driver service with tablet-based TOC)	
Program Design	• Designing TOC services based on stakeholder feedback ○ Satisfaction surveys for patients AND pharmacists • Call center staffed by student pharmacists/techs to provide med recs and TCM scheduling • Pharmacy staff training in MTM and TCM ○ Could benefit from additional disease state training/credentialing in focus areas • Important for adherence counseling to be patient-specific vs. one-size-fits-all • Timely patient follow-up to monitor med- and disease-related problems • Disease-specific checklists to ensure comprehensive intervention & communication with patients	• Communication/EHR access • Hospital resources, pharmacy resources ○ Some studies noted less of a problem, since TOC fit into their existing workflows ○ Pressure of retail to get patients in/out counteracts nature of MTM ○ Additional staffing needed for service • Pharmacists tend to focus on medication issues rather than disease-related indicators • Adherence interventions may not be successful if they are not tailored to individual patients' needs • Home visits: need more info on incremental benefit given the added cost	• Need to design sustainable collaborative model for TOC. Potential avenues include: ○ Partnership with local health systems ○ Partnership with third-party insurance companies ○ Partnership with ACO to receive additional quality-based compensation • Provide training to participating pharmacists and other staff • Incorporate auxiliary staff like interns and techs into workflow as much as possible to free up pharmacist time • Brand the TOC service as a coordination of care program extending beyond just TCM (e.g., *Sona Access*) • Reviewing descriptions of services and compilation of lessons learned may provide insight for TOC program developers
TCM Champions in Partner Organizations	• Senior hospital leadership buy-in and support • Nurses & social workers referring outpatient TCM • Strong multidisciplinary relationships with visiting nurses, PT/OT, community PCPs, and hospital admin	• Lack of provider recognition around scope & impact of pharmacist MTM services • Physician acceptance of recommendations from community pharmacies is low compared to other pharmacy practice settings • Hospital staff didn't consistently buy in: they felt they were marketing a particular pharmacy and were uncomfortable with that • Senior hospital leadership should directly address staff about importance of program	• Important to educate non-pharmacist stakeholders about the scope of pharmacist activities that can support TOC • Training for TOC should reinforce opportunities to improve quality of care through partnerships to help staff members understand the value of the service and how patients could benefit • Use TCM as initial collaboration to build trust with providers and expand partnership ○ Form strong relationship between discharge coordinators at hospitals and other settings ○ Communicate with provider before face-to-face visit to identify concerns they have for patient

ACO−accountable care organization. EHR−electronic health record, HIE−health information exchange, IT−information technology, MTM−medication therapy management, OT−occupational therapy, PCP−primary care provider, PT−physical therapy, TCM−transitional care management, TOC−transitions of care

Aim 2: Intervention Mapping

In the first step of intervention mapping stakeholders were presented with a blank logic model and challenged to brainstorm all of the key program objectives, inputs, and outputs that would be associated with the service (Appendix 3). Goals for the service included improving the health of IndyCare patients by facilitating smooth care transitions from healthcare settings back into the community, increasing the impact of the service by building and growing enrollment channels, supporting the service's financial sustainability by meeting requirements for TCM billing, and identifying barriers and facilitators to improving reimbursement rates. Meeting requirements for TCM billing was identified as the most urgent proximal objective. Minimum requirements for TCM billing were identified and used to screen potential technology and process solutions for documenting TCM services.

In the second step of intervention mapping, the program and its implementation were redesigned base on the logic model. To align with TCM billing requirements, the ThoroughCare TCM technology platform was selected as a compliant documentation method that automatically prepared billing submissions for CMS services. Patient enrollment was identified as a bottleneck limiting program implementation, and became a focus of working group meetings with UNC Medical Center partners in an effort to expand enrollment criteria on the hospital side. Initiatives were launched to partner with a local hospital and several payer organizations and obtain data sharing agreements for Hillsborough Pharmacy patients. From the logic model discussions, a need was identified for a robust training program that dove deep into each element of the TCM service, particularly around workflow, using the ThoroughCare technology, and best practices for patient engagement in TCM.

In the third step of intervention mapping, new materials were developed in support of the refined program. These included expanded enrollment criteria for the program to include all Hillsborough pharmacy customers discharging from UNC Hospitals and deemed to be high-risk for readmissions, training program modules for all participating TCM service providers, and informational presentation decks to better describe the services and anticipated questions for potential future pharmacy partners. Another deliverable for the new pharmacy partner implementation plan was the development of external partner development guides, describing potential community partners for TCM like hospital systems, ACOs, skilled nursing facilities, and PCPs, and how to go about approaching each of these stakeholders about a potential TCM partnership. Some of the heterogeneity in interview feedback – e.g., different levels of interest in the telehealth potential of the TCM service, different staffing models – confirmed IndyCare's approach to offer a highly customizable suite of partnership options to meet the contextual needs of each pharmacy partner.

Aim 3: Feasibility Interviews

Seven independent pharmacists considering partnership with IndyCare were invited to participate in feasibility interviews. Six pharmacists scheduled interviews and 5 attended their appointments between March 3rd and March 6th, 2020. One of the 6 interviewees failed to attend the interview. Collective feedback from the interviews can be found in Table 3.

Table 3. Feedback from the feasibility interviews.

Feasibility Measure	Interview Feedback Themes
Efficacy potential *(How effective do you think this program will be? If effective, what benefits do you think the program will result in?)*	Very effective for … improving patient attendance of follow-up appointments increasing clinical revenue reducing overall healthcare spend reducing readmissions
	Pharmacist improves service effectiveness
	More effective if patient is already a customer
	Very successful once provider relationships are established
	Requires highly motivated clinical staff
	Unsure of profitability
	Fits well for clinical pharmacist
Fit *(How well do you feel this program will fit with the way your pharmacy operates? Would you be able to implement the required TCM services?)*	Scheduling may be difficult
	Face-to-face visits in-person may be difficult
	One staff member would be dedicated to service
	All staff participate in clinical and dispensing workflows
	Already perform medication therapy management
	Learning curve for new service
	ACO near our store already provides TCM
	Already doing these services
	Very receptive
Acceptability *(How easy/difficult would it be for you or other staff members to support this program?)*	Avoid disrupting current workflows
	Committed to enhancing patient care
	Understanding that pilot service will require trial & error
	Already discussing service with techs
	Already tracking discharge summaries, hospital prescriptions
	Patient compliance with TCM service could be an issue
	Concern about telehealth cheapening care quality
	Follow-on services could increase value of TCM
Practicality *(How practical do you think this program is?)*	Easy, user-friendly, improving with more experience
	Documentation is a bit heavy
	Very practical, nothing pharmacist training hasn't prepared us for
	More practical for "forward-thinking" independent pharmacies
	Have to change expectations of what community pharmacy can provide

	Should be standard of pharmacy care
	Unique, innovative for pharmacy to provide service
	Good for building relationships with providers
Usability *(How easy/difficult would it be for you or other staff members to support this program?)*	Very easy for clinical coordinators/pharmacists
	Other staff members – it depends Harder for dispensing pharmacists
	Techs need further training to… Identify patients Provide backbone of service Provide medication reconciliation Collect baseline patient information
	Difficult to recognize which patients have been recently discharged
Intent to use *(If your pharmacy were to partner with IndyCare, to what degree do you feel this program would be adopted by you or other staff members?)*	Buy-in would be strong, provided… Adequate financial support Service is patient-centered
	Fits well with our other clinical services
	Partnering is contingent on revenue
	Not interested in telephone service Would instead implement patient home visit-based TCM
Facilitators *(What would be some facilitators to implementing this program? Put another way, what would enable its success?)*	This service is good pharmacy marketing
	Already working with external provider partners
	Designated clinical staff
	Get techs involved once processes are figured out
	Strong pharmacy reputation in community
	Finding unique patient recruitment channels
	Pharmacists as champions for service
	Large Medicare population
Barriers *(What would be some challenges to implementing this program with your pharmacy?)*	Biggest challenge is identifying eligible patients
	Dependency on external partners
	Some external partners already provide service
	Patients not attending face-to-face visits
	Scheduling appointments
	Time required to learn new technologies
	Staff training requirements
	Justifying revenue earned for time spent

Interviewees were largely positive regarding the perceived efficacy of the program. They proposed several favorable outcomes of IndyCare's TCM service model, including reduced 30-day readmissions rates, improved patient understanding and adherence to discharge plans, better attendance of scheduled follow-up appointments, increased clinical revenue for the pharmacy, and reduced healthcare costs overall. Interviewees shared numerous responses regarding what they liked most about the IndyCare TCM model. These included improving the coordination of transitional care, access to care with telehealth, financial incentives, and relationships with patients and providers. "We do medication reconciliation at discharge, but this billing code incentivizes taking a step beyond [that]," one interviewee pointed out.

Despite these potential advantages, several interviewees expressed uncertainty regarding the profitability of the service. They acknowledged that it would be dependent on variables like agreed-upon profit-share with IndyCare, time required to conduct the service, and the turnover of accounts receivable (since patients are responsible for a coinsurance fee for the service). "In the TCM model, 20% of the fee is billed retroactively to the patient… collections are sometimes tricky in my market," one interviewee noted. Factors deemed to maximize the efficacy of the program included strong pharmacist leadership internally, physician buy-in as an external partner, patients that are already customers of the pharmacy, and a motivated clinical staff. Key barriers to program success that emerged were the uncertainty around financial sustainability, difficulty for patients to comply with face-to-face appointments, lack of clear direction regarding patient recruitment, and dependency on external partners. Summarized by one interviewee: "The biggest [program barriers] are getting patient participation, fostering the physician relationship so they view you as partner. Finding who these [eligible] patients are is the biggest [program barrier." Some of the interviewees' least favorite aspects of the service were the time-consuming amount of documentation required, need for quick identification of discharged patients, and uncertainty around how new technologies would be implemented.

When various staffing models were discussed, interviewees diverged into 2 camps: most employed a dedicated clinical pharmacist/ clinical team model, with one or more pharmacists and/or technicians focusing exclusively on providing clinical services like medication therapy management to the store's patients. However, one interviewee employed a shared staffing model wherein all pharmacy staff are cross-trained to support clinical work streams as well.

DISCUSSION

This study presents a unique focus on implementation outcomes in the practice setting of an integrated independent pharmacy + clinic. Prior literature on pharmacy TOC services has focused on intervention outcomes like reduced readmissions[10] or financial viability.[12] Within this setting, the pharmacy team collaborates with a nurse practitioner to ease patients' transitions back home after a hospital admission. This community pharmacy + clinic practice model has the potential to help reduce hospital readmissions, alleviating this large burden on CMS, the hospital system, and the U.S. economy as a whole. Given the frequency with which patients visit their community pharmacies, these extra touchpoints can provide opportunities for the pharmacist and nurse practitioner in the embedded clinic to check in with patients and help to identify, resolve, or refer problems before they escalate to the emergency department. Additionally, while most TCM studies focus on program outcomes, this study provides a detailed descriptive account of setting up a new, interdisciplinary TCM service and optimizing operations with a methodological implementation framework. Following a structured approach enabled IndyCare to adapt to the custom challenges of its landscape, patient population, and collaborative partners. Given the shrinking margins of traditional retail pharmacy and the advanced clinical training with which pharmacists are equipped, community pharmacies are highly incentivized to

experiment with novel business models like TCM in order to find reimbursement for cognitive services provided by pharmacists.[41] Enterprising community pharmacies seeking to establish a TCM partnership could use this research to inform their own implementation plan.

This study identified best practices, facilitators, and barriers to proactively shaping the implementation of a pharmacy-centered TCM service. These insights were incorporated into the ongoing intervention to refine and optimize its implementation and future expansion across North Carolina. In contrast to prior pharmacy-based TOC services, IndyCare's pharmacy + clinic intervention model achieves greater autonomy by billing the TCM service under the licenses of the nurse practitioners that staff their clinic. While this improves the program's feasibility, one clear insight from this research is that transitional care management is still a highly interdisciplinary service defined by one or more provider hand-offs. Obtaining external partner awareness and buy-in is crucial. A second key insight is that stakeholders need further education on the benefits and processes of TCM. Both the environmental scan and feasibility interviews shared a recurring theme of poor patient/provider understanding of the value of TCM, the unmet needs in care transitions, and how pharmacies are equipped to meet those needs. Lastly, since TCM requires partnership with other care providers, the service is a natural first step toward further interdisciplinary collaboration. Despite the promising feedback from these initial feasibility interviews, IndyCare and other TCM providers must find a way to address the key barrier of finding and recruiting eligible patients. A critical mass of patients will be required to justify the operating costs of the TCM service.

Notably, implementation research involves regular adjustment of the intervention throughout the study and thus cannot be used to definitively associate the intervention with particular outcomes. Additionally, our intervention mapping centered around just one community pharmacy, and this small sample size limits the external applicability of the service improvements and findings described in this study. While trends in the interview data may be identified and described, the small sampling of interviewees leaves these results vulnerable to the endemic biases and perceptions of those interviewed, which consisted of a convenience sample of pharmacists considering partnership with IndyCare. This may have skewed interview feedback to be more positive. In order to demonstrate meaningful outcomes, future TCM studies should be conducted with a standardized and prospectively-designed intervention across multiple pharmacies, with prespecified patient inclusion/exclusion criteria, and enough enrollment in the program to demonstrate statistically significant outcomes for the anticipated effect size. The ideal study would compare different iterations of a TCM intervention, e.g., home visits vs. clinic visits vs. telehealth, to determine how the different models impact outcomes.

In conclusion, this research highlights the feasibility of implementing a transitional care management program in the community pharmacy + clinic setting, in partnership with a large academic medical center. Strengths of this research include a robust synthesis of implementation themes for TCM in the community pharmacy setting, a detailed case study of program design in one pharmacy + clinic setting, and feedback on anticipated implementation considerations from multiple unaffiliated pharmacists to help translate these implementation best practices to a broader context. Future TCM program design should proactively incorporate best practices and navigate potential barriers across patient identification and enrollment, patient information sharing, patient engagement, program design, and creating TCM champions within partner organizations.

REFERENCES:

1. Transitions of Care Technical Series on Safer Primary Care Transitions of Care: Technical Series on Safer Primary Care. 2016.
2. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. *N Engl J Med*. 2009;360(14):1418-1428. doi:10.1056/NEJMsa0803563
3. Zuckerman RB, Sheingold SH, Orav EJ, Ruhter J, Epstein AM. Readmissions, observation, and the hospital readmissions reduction program. *N Engl J Med*. 2016;374(16):1543-1551. doi:10.1056/NEJMsa1513024
4. Centers for Medicare and Medicaid Services. Transitional Care Management Services. Medicare Learning Network. https://www.cms.gov/outreach-and-education/medicare-learning-network-mln/mlnproducts/downloads/transitional-care-management-services-fact-sheet-icn908628.pdf. Published 2016. Accessed April 21, 2019.
5. Tsuyuki RT, Beahm NP, Okada H, Al Hamarneh YN. Pharmacists as accessible primary health care providers: Review of the evidence. *Can Pharm J (Ott)*. 2018;151(1):4-5. doi:10.1177/1715163517745517
6. Tetuan CE, Guthrie KD, Stoner SC, May JR, Hartwig DM, Liu Y. Impact of community pharmacist-performed post-discharge medication reviews in transitions of care. *J Am Pharm Assoc (2003)*. 2018;58(6):659-666. doi:10.1016/j.japh.2018.06.017
7. Daliri S, Hugtenburg JG, Ter Riet G, et al. The effect of a pharmacy-led transitional care program on medication-related problems post-discharge: A before-After prospective study. *PLoS One*. 2019;14(3):e0213593. doi:10.1371/journal.pone.0213593
8. Ni W, Colayco D, Hashimoto J, et al. Impact of a pharmacy-based transitional care program on hospital readmissions. *Am J Manag Care*. 2017;23(3):170-176.
9. Feldmann JD, Otting RI, Otting CM, Witry MJ. A community pharmacist-led service to facilitate care transitions and reduce hospital readmissions. *J Am Pharm Assoc (2003)*. 2018;58(1):36-43. doi:10.1016/j.japh.2017.09.004
10. Heaton PC, Frede S, Kordahi A, et al. Improving care transitions through medication therapy management: A community partnership to reduce readmissions in multiple health-systems. *J Am Pharm Assoc (2003)*. 2019;59(3):319-328. doi:10.1016/j.japh.2019.01.005
11. Wright EA, Graham JH, Maeng D, et al. Reductions in 30-day readmission, mortality, and costs with inpatient-to-community pharmacist follow-up. *J Am Pharm Assoc (2003)*. 2019;59(2):178-186. doi:10.1016/j.japh.2018.11.005
12. Ni W, Colayco D, Hashimoto J, et al. Reduction of healthcare costs through a transitions-of-care program. *Am J Health Syst Pharm*. 2018;75(10):613-621. doi:10.2146/ajhp170255
13. van Bokhoven MA, Kok G, van der Weijden T. Designing a quality improvement intervention: a systematic approach. *Qual Saf Health Care*. 2003;12(3):215-220.

14. Schmid AA, Andersen J, Kent T, Williams LS, Damush TM. Using intervention mapping to develop and adapt a secondary stroke prevention program in Veterans Health Administration medical centers. *Implement Sci*. 2010;5:97. doi:10.1186/1748-5908-5-97

15. Health JHBS of PHC for. *Serving the Greater Good: Public Health and Community Pharmacy Partnerships*.; 2017.

16. Knudsen HK, Abraham AJ, Oser CB. Barriers to the implementation of medication-assisted treatment for substance use disorders: the importance of funding policies and medical infrastructure. *Eval Program Plann*. 2011;34(4):375-381. doi:10.1016/j.evalprogplan.2011.02.004

17. Oftebro R. *Local Solutions in Action: Independent Community Pharmacists Describe Responding to the Opioid Epidemic*.

18. Simone A. Pharmacists Among Most Widely Trusted Professionals, Gallup Poll Finds. Pharmacy Times. https://www.pharmacytimes.com/resource-centers/pharmacy-management/pharmacists-among-most-widely-trusted-professionals-gallup-poll-finds. Published 2013. Accessed April 23, 2019.

19. Frail CK, Garza OW, Haas AL. Experience with technology-supported transitions of care to improve medication use. *J Am Pharm Assoc (2003)*. 2016;56(5):568-572. doi:10.1016/j.japh.2016.04.565

20. Kennelty KA, Chewning B, Wise M, Kind A, Roberts T, Kreling D. Barriers and facilitators of medication reconciliation processes for recently discharged patients from community pharmacists' perspectives. *Res Social Adm Pharm*. 2015;11(4):517-530. doi:10.1016/j.sapharm.2014.10.008

21. Kooyman CDA, Witry MJ. The developing role of community pharmacists in facilitating care transitions: A systematic review. *J Am Pharm Assoc (2003)*. 2019;59(2):265-274. doi:10.1016/j.japh.2018.11.009

22. Fanizza FA, Ruisinger JF, Prohaska ES, Melton BL. Integrating a health information exchange into a community pharmacy transitions of care service. *J Am Pharm Assoc (2003)*. 2018;58(4):442-449. doi:10.1016/j.japh.2018.02.012

23. Bloodworth LS, Malinowski SS, Lirette ST, Ross LA. Pharmacist linkage in care transitions: From academic medical center to community. *J Am Pharm Assoc (2003)*. 2019;59(6):896-904. doi:10.1016/j.japh.2019.08.011

24. Shaver A, Morano M, Pogodzinski J, Fredrick S, Essi D, Slazak E. Impact of a community pharmacy transitions-of-care program on 30-day readmission. *J Am Pharm Assoc (2003)*. 2019;59(2):202-209. doi:10.1016/j.japh.2018.10.011

25. Patton AP, Liu Y, Hartwig DM, et al. Community pharmacy transition of care services and rural hospital readmissions: A case study. *J Am Pharm Assoc (2003)*. 2017;57(3S):S252-S258.e3. doi:10.1016/j.japh.2017.02.019

26. Sen S, Bowen JF, Ganetsky VS, et al. Pharmacists implementing transitions of care in inpatient, ambulatory and community practice settings. *Pharm Pract (Granada)*. 2014;12(2):439.

27. Lussier ME, Evans HJ, Wright EA, Gionfriddo MR. The impact of community pharmacist involvement on transitions of care: A systematic review and meta-analysis. *J Am Pharm Assoc (2003)*. 2020;60(1):153-162.e5. doi:10.1016/j.japh.2019.07.002

28. Pherson EC, Shermock KM, Efird LE, et al. Development and implementation of a postdischarge home-based medication management service. *Am J Health Syst Pharm*. 2014;71(18):1576-1583. doi:10.2146/ajhp130764

29. Foster AR, Gatewood SS, Kaefer TN, Goode J-VKR. Decision-maker and staff perceptions of the pharmacist's role in transitions of care programs. *J Am Pharm Assoc (2003)*. 2019;59(4S):S101-S105. doi:10.1016/j.japh.2019.03.012

30. Nazar H, Nazar Z, Portlock J, Todd A, Slight SP. A systematic review of the role of community pharmacies in improving the transition from secondary to primary care. *Br J Clin Pharmacol*. 2015;80(5):936-948. doi:10.1111/bcp.12718

31. Luder HR, Frede SM, Kirby JA, et al. TransitionRx: Impact of community pharmacy postdischarge medication therapy management on hospital readmission rate. *J Am Pharm Assoc (2003)*. 2015;55(3):246-254. doi:10.1331/JAPhA.2015.14060

32. Kalista T, Lemay V, Cohen L. Postdischarge community pharmacist-provided home services for patients after hospitalization for heart failure. *J Am Pharm Assoc (2003)*. 2015;55(4):438-442. doi:10.1331/JAPhA.2015.14235

33. Graham J, Tusing LD, Gregor CM, Wright EA. Community Pharmacists' Perceptions of Care Following the Implementation of a Transitions-of-Care Program. *J Pharm Pract*. January 2019:897190018824819. doi:10.1177/0897190018824819

34. Korn AS, Michaels NM, Phillips D, Rhodes LA, Marciniak MW. Impact of a coordination of care program in an independent community pharmacy. *J Am Pharm Assoc (2003)*. 2019;59(4S):S141-S145. doi:10.1016/j.japh.2019.05.020

35. Lussier ME, Graham JH, Tusing LD, Maddineni B, Wright EA. Analysis of community pharmacist recommendations from a transitions of care study. *J Am Coll Clin Pharm*. 2019;2(4):349-356. doi:10.1002/jac5.1139

36. Pellegrin KL, Krenk L, Oakes SJ, et al. Reductions in Medication-Related Hospitalizations in Older Adults with Medication Management by Hospital and Community Pharmacists: A Quasi-Experimental Study. *J Am Geriatr Soc*. 2017;65(1):212-219. doi:10.1111/jgs.14518

37. Southerland LT, Porter BL, Newman NW, Payne K, Hoyt C, Rodis JL. The feasibility of an inter-professional transitions of care service in an older adult population. *Am J Emerg Med*. 2019;37(3):553-556. doi:10.1016/j.ajem.2018.07.047

38. Took RL, Liu Y, Kuehl PG. A Study to Identify Medication-Related Problems and Associated Cost Avoidance by Community Pharmacists during a Comprehensive Medication Review in Patients One Week Post Hospitalization. *Pharmacy (Basel)*. 2019;7(2). doi:10.3390/pharmacy7020051

39. Zeleznikar EA, Kroehl ME, Perica KM, Thompson AM, Trinkley KE. Integration of community pharmacists in transition of care (TOC) services: current trends and pharmacist perceptions. *J Pharm Pract*. 2017;32(1):897190017735976. doi:10.1177/0897190017735976

40. Polinski JM, Moore JM, Kyrychenko P, et al. An insurer's care transition program emphasizes medication reconciliation, reduces readmissions and costs. *Health Aff (Millwood)*. 2016;35(7):1222-1229. doi:10.1377/hlthaff.2015.0648

41. Bauman JL, Manasse HR. Clinical pharmacy practice in community pharmacies: A frontier with promise? *J Am Coll Clin Pharm*. 2019;2(4):326-329. doi:10.1002/jac5.1138

REPORT ADDENDA:

ACKNOWLEDGMENTS

Thank you to Chloe Davis for her guidance in navigating the IRB approval process, and Gregory Vassie and Franklin Roye of IndyCare for providing key TCM resources, training materials, and images.

FUNDING SUPPORT

This study was fully funded by the industry partner, IndyCare.

CONFLICTS OF INTEREST

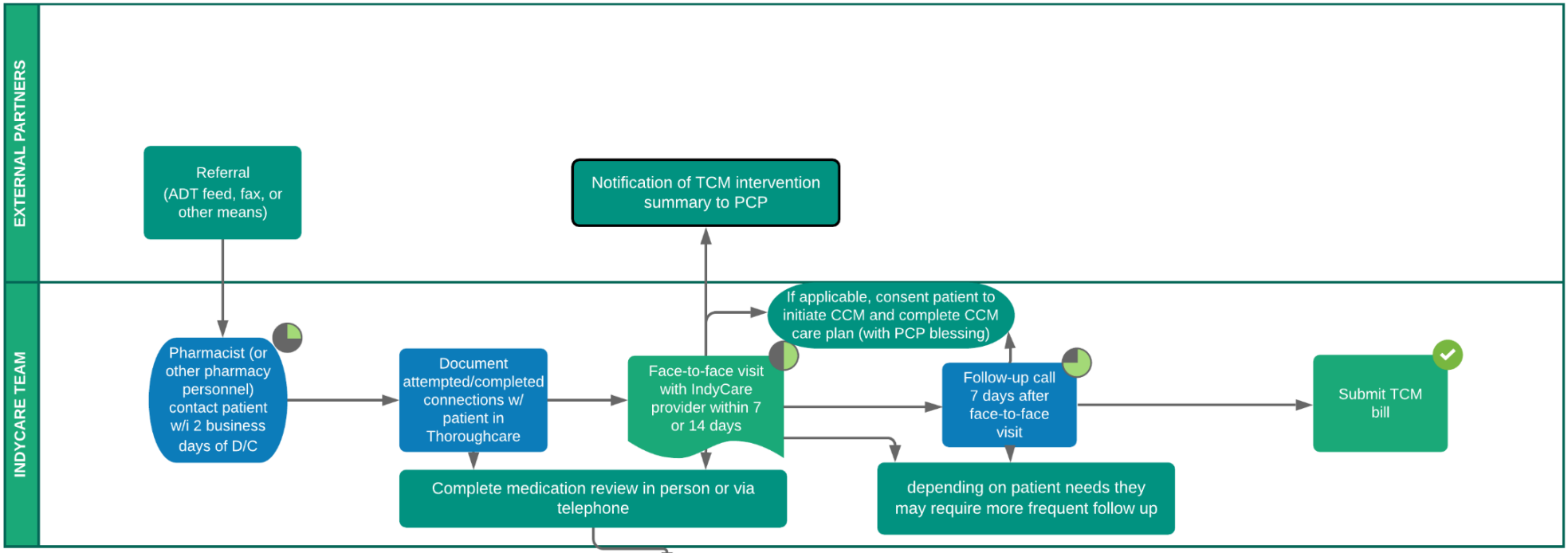
The author has no conflicts of interest to declare.

SUPPLEMENTAL MATERIALS

Appendix 1. List of TCM Service Requirements, per CMS guidelines[4]:

1. An interactive contact: This must be made with the beneficiary and/or caregiver within 2 business days of the patient's inpatient discharge. These can be conducted via email, phone, or face-to-face. At least 2 attempts should be made to communicate with the patient, and if all the other steps are completed, then the service may be reported.
2. Certain non-face-to-face services: These must all be provided for the patient, unless they are determined to be not medically needed.
    a. Services to be provided by physicians or non-physician providers (NPPs) include:
        i. Obtaining and reviewing discharge information
        ii. Reviewing need for or following up on pending diagnostic tests and treatments
        iii. Interacting with other health care providers (HCPs) who will be continuing problem-specific care for the patient in the outpatient setting,
        iv. Providing education to the patient and/or their caregiver and family
        v. Coordinating referrals and community resources the patient may need
        vi. Assisting in scheduling follow-up with said community providers and services
    b. Services to be provided by clinical staff (including pharmacists) under the direction of physicians or NPPs include:
        i. Communicating with agencies or services the patient uses
        ii. Providing education to the patient, caregiver, or family regarding self-management and independent living
        iii. Assessing and supporting treatment regimen adherence and medication management
        iv. Identifying available community and health resources
        v. Assisting the patient, caregiver, or family in accessing the needed community care and services
3. A face-to-face visit: This must be scheduled and carried out within 14 days of discharge for moderate-complexity, and within 7 days of discharge for high-complexity. Notably, this face-to-face visit may be conducted via telehealth.

Appendix 2. Hillsborough Pharmacy TCM Service Workflow



Non-Face-to-Face Services to be completed by pharmacist or other clinical staff:

- Communicate with agencies and community services the beneficiary uses
- Provide education to the beneficiary, family, guardian, and/or caretaker to support self-management, independent living, and activities of daily living
- Assess and support treatment regimen adherence and medication management
- Identify available community and health resources
- Assist the beneficiary and/or family in accessing needed care and services

This involves obtaining patient med list from hopital discharge, Athena PBM integration and pharmacy records.

-Review meds for prior authorization or other insurance requirements

- Assess potential adherence issues:
  - Cost
    - Can they afford their copay? Can they afford all copays at once (MedSync)?
  - Can they tolerate prescribed drug formulation?
    - i.e. can't swallow large tablets, vision problems so need insulin pens, etc.
  - Need for blister packs/pill box?
  - Transportation (need delivery?)
- Review vaccine hx
- Update drug allergies
- Update patient demographic information

Follow-up call activities: Patient satisfaction survey, offer Medsync enrollment, CCM to start the following month (with blessing of PCP)

Technology: Athena EHR, ThoroughCare TCM platform (integrated with Athena), Next Patient scheduling/telemedicine platform

Appendix 3. IndyCare Transitions of Care Service Logic Model

RESOURCES/INPUTS ⟷ ACTIVITIES ⟷ OUTPUTS/MEANINGS ⟷ OUTCOMES

Goals/Priorities:

- Improve the health of IndyCare patients by facilitating smooth care transitions from healthcare settings back into the community
- Increase impact of the service by building and growing enrollment channels
- Support the service's financial sustainability by meeting requirements for TCM billing
  - Identify barriers and facilitators to improving reimbursement rates

Resources:

- Personnel:
  - 1 clinical pharmacist manager
  - 1 TCM technician
  - 1 nurse practitioner
- NC HealthConnex access
  - *Additional ADT monitoring tech*?
- ThoroughCare TCM platform
- EHR system (Athena)
- Clinic space
- HIPAA-compliant telehealth platform to connect clinic with participating pharmacies and/or patients
- Health & community resource database

Activities:

- Identify patients discharged within 2 business days
- Contact patient within 2 business days to discuss their status, needs, schedule face-to-face and any other follow-up appointments
- Provide TCM patient with certain non-face-to-face services (eg, review discharge information, provide education, refer community resources)
- Provide face-to-face visit within 14 days for moderate-complexity patient or within 7 days for high-complexity patient
  - Complexity is determined by level of medical decision-making provided for the patient
  - May be provided via telehealth
  - Provide medication reconciliation and management on or before the face-to-face visit
- At a minimum, document the following:
  - Discharge date
  - Contact date
  - Face-to-face visit date
  - Medical complexity (mod. or high)
- Submit TCM report to CMS 30 days post-discharge for reimbursement

Tangible outputs:

- Enrollment in TCM program
  - # channels for enrollment (eg, partnerships, ADT alert, walk-ins due to advertising, etc)
- TCM reimbursement rate
- # pharmacies opting in to TCM service partnership
- TCM service revenue
- TCM service costs
- TCM person-hours per patient

Evaluation outputs:

- Feasibility/usability of TCM service from the perspective of:
  - Current stakeholders
  - Future stakeholders
- Barriers/facilitators to improving tangible outputs

Short term (within year):

- Develop actionable quality improvement plan for TCM service to drive improvement across all tangible outputs
- Develop plan for future research/service validation
- Establish critical mass of pharmacy and patient TCM participants to enable clinical outcome studies

Longer term (beyond scope):

- Achieve break-even revenues for TCM service
- Validate IndyCare TCM service with clinical outcomes study
- Secure key strategic partners for IndyCare service and site expansion

Impact:

- This quality improvement study will support the development of IndyCare's system for implementing and improving their TCM service
- This study will describe the feasibility of an innovative clinical service provided within the context of community pharmacy